

CLAIM AMENDMENTS

A complete listing of the claims of the present application, including those being cancelled herein, together with the required claim status indicators, is set forth as follows:

Claims 1-18 (cancelled)

Claim 19 (original) A method for fabricating a magnetoresistive sensor having a recessed sensing element and a flux guide formed by an extension of a free layer of the sensing element, the method comprising the steps of:

forming a multi-layer wafer which includes layers that will serve as said sensing element and said flux guide; and

defining a track width for said sensing element and said flux guide in a single photo processing operation.

Claim 20 (original) A method in accordance with Claim 19 wherein said sensing element is constructed as one of a magnetic tunnel junction device or a current-perpendicular-to-plane spin valve device.

Claim 21 (original) A method in accordance with Claim 19 wherein said multi-layer wafer forming step includes forming a wafer having an antiferromagnetic layer, a ferromagnetic layer (pinned layer) disposed on said antiferromagnetic layer, a barrier layer disposed on said pinned layer, a sensing ferromagnetic sub-layer (free sub-layer) disposed on said barrier layer, and a cap layer.

Claim 22 (original) A method in accordance with Claim 21 wherein said photo processing operation includes applying a photoresist mask on said wafer to define a self-aligned sensing element and flux guide having active regions disposed between a pair of common track

width boundaries that define sensing element and flux guide track widths which are substantially equal to each other.

Claim 23 (original) A method in accordance with Claim 22 further including removing said cap layer, said free sub-layer, said barrier layer and said pinned layer from areas thereof that are outside of said active regions to expose a corresponding area of said antiferromagnetic layer.

Claim 24 (original) A method in accordance with Claim 13 further including forming a insulating layer over said exposed area of said antiferromagnetic layer, said insulating layer being of sufficient thickness to cover exposed portions of said pinned layer and said barrier layer along said track width boundaries.

Claim 25 (original) A method in accordance with Claim 24 further including forming an exchange bias layer over said insulating layer and removing said photoresist mask and said cap layer to expose said free sub-layer within said track width boundaries while leaving said exchange bias layer intact outside of said track width boundaries.

Claim 26 (original) A method in accordance with Claim 25 further including applying additional free layer material over said wafer, including said free sub-layer and said exchange bias layer, whereby said additional free layer material completes said sensing element and said flux guide active regions within said track width boundaries and provides an exchanged biased free layer outside of said track width boundaries that longitudinally biases said active regions to a selected magnetic orientation in the absence of an external magnetic field..

Claims 27-28 (cancelled)